

WAIVER GUIDE

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Waiver guide reviewed by the AF/SG Consultant for Ophthalmology, Refractive Surgery, Lt Col Charles Reilly.

CONDITION: REFRACTIVE SURGERY (RS)

I. Overview.

Vision correction with spectacles and contact lenses poses some operational disadvantages, such as fogging, displacement, and potential equipment incompatibility. The AF approved RS to reduce dependence on traditional optical correction. This led to implementation the USAF Refractive Surgery (USAF-RS) program. The USAF-RS program has three management groups: (1) Trained aviation and aviation-related special duty (AASD) personnel, (2) Applicants to AASD, and (3) Warfighter personnel. This waiver guide provides program management directions for the first two groups.

The USAF-RS program authorizes two primary categories of corneal refractive surgery (CRS) for eligible AF active duty and AF Reserve Component (ARC) members; Advanced Surface Ablation (ASA) and Intra-Stromal Ablation (ISA) procedures.

Approved ASA procedures include: photorefractive keratectomy (PRK), epithelial-laser in-situ keratomileusis (epi-LASIK), and laser in-situ epithelial keratomileusis (LASEK).

Approved ISA procedures include: standard laser in-situ keratomileusis (LASIK), All Laser LASIK (using a femtosecond laser for flap creation).

Wave-Front-Guided (WFG) technology combined with ASA and ISA procedures are also approved and include WFG-PRK and WFG-LASIK.

Some CRS techniques, such as radial keratotomy, thermokeratoplasty, and intra-corneal rings, are associated with less predictable outcomes and more post-treatment complications and are not authorized. Intra-ocular RS techniques, such as clear lens extraction and phakic lens implantation, are not authorized.

RS treatment plans designed to create a monovision outcome (one eye corrected for distance and the other eye corrected for near) are not authorized for AASD and AASD applicants. Monovision treatments result in reduced depth perception and a failure to meet aeromedical flight standards.

Refractive surgery techniques correct refractive errors by modifying the corneal shape. Myopic eyes tend to have a corneal profile with a steep contour (steeper centrally, flatter peripherally); hyperopic eyes have a relatively flat contour. Astigmatism is the result of a non-spherical contour. ASA and ISA procedures use a computer guided ultraviolet (UV)

excimer laser to ablate (remove) corneal stroma, permanently altering corneal contour, effectively reducing the refractive error and, ideally, result in unaided visual acuity of 20/20 or better. The central corneal is flattened for treatment of myopia. Hyperopic treatments remove para-central corneal to create a steeper corneal contour. Differential application of laser ablation is used to treat astigmatism.

In ASA procedures, the cornea epithelial tissue is first removed or displaced (PRK – mechanical abrasion, LASEK – alcohol solution, epi-LASIK – mechanized blade). The underlying stromal tissue is then ablated to a pre-programmed contour and the eye is allowed to heal (re-epithelialize). A bandage soft contact lens covers the treated area until epithelialization closes the wound. For ISA procedures, a partial thickness corneal stroma flap is first created. Using a laser or mechanical microkeratome, a lamellar cut is made into the outer corneal stroma creating a flap that is typically hinged on either the nasal or superior edge. The corneal epithelium is left intact on the surface of the flap. The flap is lifted and folded out of the way of the excimer laser. The underlying stromal bed is ablated, altering the corneal contour. The flap is repositioned over the treated area. Topical steroid eye drops are used about 1-2 weeks following ISA and up to 4 months following ASA reduce corneal haze and promote stabilization.

ISA offers some advantages over ASA including a quicker recovery of vision, less associated discomfort, shorter duration of steroid eye drop use, and potentially faster return to flight duties. However, the ISA flap never completely heals and presents a risk of incidental traumatic flap dislocations for years following treatment. ASA procedures avoid flap complications and potential flap displacement. Dry eye symptoms are a common post-RS complaint for both ASA and ISA.

The following clinical criteria must be met before permission to proceed and waiver is granted following CRS treatment in AASD personnel:

- A. Age 21 or older.
- B. Refractive error limits do not exceed those listed in Table 1.
- C. Show demonstrated refractive stability with no more than 0.50 diopter shift in manifest sphere or cylinder power between two or more refractions (one refraction current with application data and the other at least one year older).
- D. Normal corneal topography (CT) – no evidence of abnormal corneal surface topography (including but not limited to): corneal irregularity, abnormal videokeratography, keratoconus, and/or “topographical pattern suggestive of keratoconus” (TPSK) in either eye.
- E. No history or evidence of (including but not limited to): active ophthalmic disease, corneal neovascularization within 1 mm of intended ablation zone, central crystalline lens opacifications (i.e. post subcapsular cataracts), severe dry eyes, keratoconjunctivitis sicca, uveitis, keratitis, excessive pupil enlargement, glaucoma, predisposing disorder to glaucoma development (i.e. pigment dispersion syndrome with IOP greater than 21 mm Hg) or retinal pathology.

- F. Not currently pregnant or actively nursing--must be greater than 6 months post-partum or greater than 6 months after discontinuing nursing.
- G. Not using concurrent topical or systemic medication which may impair healing (including but not limited to): corticosteroids, antimetabolites, isotretinoin (Accutane®), amiodarone hydrochloride (Cordarone®), and/or sumatriptan (Imitrex®).
- F. No history of medical conditions which, in the judgment of the treating corneal refractive surgeon may impair healing (including but not limited to): collagen vascular disease, autoimmune disease, immunodeficiency disease, active or history of ocular herpes zoster or simplex, endocrine disorders (e.g. thyroid disorders and diabetes).

Table 1 contains the pre-RS cycloplegic refraction values allowed for possible waiver for FC I/IA, II, IIU, and III.

Table 1: Pre-RS Cycloplegic Refractive Error Limits

Myopia (Most myopic plane)	≤ -8.00 Diopters
Hyperopia (Most hyperopic plane)	$\leq +3.00$ Diopters
Astigmatism	≤ 3.00 Diopters

Aeromedical refractive error is based on the cycloplegic refraction. The authorized cycloplegic exam technique uses one percent cyclopentolate (Cyclogyl®), 2 drops each eye, 5 to 15 minutes apart, with examination performed no sooner than one hour after the last drop and within two hours of the last drop of cyclopentolate. The cycloplegic refractive error is the minimum refractive power needed to achieve 20/20 vision each eye separately. The refractive error standard for aeromedical purposes is that produced “in any meridian” following transposition. The rules of transposing are: (1) Algebraically add the cylinder power to the sphere power to determine the transposed power of the sphere (2) Change the sign of the cylinder (3) Change the axis by 90 degrees (do not use degrees greater than 180 or less than 001). Note: 180 degrees is on the same axis as 0 degrees.

	Sphere	Cylinder	Axis	
Example 1:	+2.25	-1.50	X 158	(minus cyl form)
Transposed	+0.75	+1.50	X 068	(plus cyl form)
Example 2:	-5.50	-2.75	X 090	(minus cyl form)
Transposed	-8.25	+2.75	X 180	(plus cyl form)

Aeromedical standards and waiver requirements are based upon the magnitude of sphere power in the meridian (plane) that gives the largest value (most minus or most plus). Myopia is represented by a negative diopter value in the sphere and hyperopia by a positive diopter value. Cylinder power represents the difference in power between the two major meridians and may be represented by either a positive or negative cylinder value. Astigmatism is the absolute value of the cylinder power (i.e. -1.50 cylinder power

and +1.50 cylinder power represents the same degree of astigmatism which is their absolute value of 1.50)

In example 1, +2.25 is the largest hyperopic sphere power with its meridian value aligned at axis 158. This represents the most hyperopic meridian. Comparing this value to the waiver limit table above, this pre-RS prescription is eligible for waiver consideration.

In example 2, -8.25 is the largest myopic sphere power with its meridian value aligned at axis 180. This represents the most myopic meridian. Comparing this value to the waiver limit table above, this pre-RS RS prescription is not eligible for waiver consideration.

The Aviation Program Manager (APM) located at Wright-Patterson AFB reviews AASD RS applications and provides program management and oversight in accordance with AF/SG policy. ASA outcomes have been excellent with nearly 100% of aircrew returned to full operational duty. About 1% of pilots and 5% of other aircrew required spectacles to meet flight standards (20/20 visual acuity). Approximately 14% to 16% of aircrew attaining uncorrected 20/20 vision achieved their best level of visual performance with supplemental spectacle correction. Only 1% of aircrew did not achieve the same level visual acuity as measured prior to surgery. Aircrew returned to flight duties on average 13 weeks after ASA. Similar statistics are evolving with ISA resulting in an average DNIF of 13 weeks; however, the number of trained aircrew selecting this treatment procedure remains relatively small (ISA was authorized in May 2007).

The AASD RS program is locally managed by the flight surgeon with close assistance of the local eye care professionals. Extensive screening of potential RS candidates is performed. Permission to proceed with RS is contingent upon signature approval of the candidate's squadron commander as well as the candidate, local eye care professional, and the local FS. The application for RS is then forwarded to the APM for review. This typically takes about 2 weeks; however, if the application is not completed fully or accurately, significant delays in processing can occur. The APM determines if the documented clinical information recorded on the application meets all pre-op RS policy criteria. When the application review is complete, the APM contacts the local FS, aircrew member, center selected by applicant (if DOD), and co-managing eyecare provider with their recommendation—either “permission to proceed” or “permission to proceed denied.”

Pilots and boom operators requesting LASIK or who have refractive errors >-5.50 diopters, but <-8.00 , will no longer require a pre-surgical baseline evaluation or 1 year waiver exam at the ACS. Follow-up examinations will continue locally including the 12 month post-surgical appointment.

After receiving permission to proceed, **Tri-Care eligible pilots and boom operators** with hyperopia (up to +3.00 diopters) will require pre-surgical baseline evaluation at the ACS in conjunction with surgery which is currently limited to Wright-Patterson AFB (WPAFB). Follow-up examinations will occur locally except for the 12 month post-

surgical appointment which is completed at the ACS in conjunction with waiver renewal. Additional ACS evaluations may be required at subsequent waiver renewals if abnormalities are present.

All other eligible active duty AASD personnel who are approved for RS can have their pre-surgical evaluation and briefings completed at any Department of Defense (DOD) Refractive Surgery Center. Their surgery is completed at this facility and follow-up examinations are performed locally.

ARC personnel, not eligible for military medical benefits must first be approved for RS by the APM, then must pursue RS at their own expense, and be followed-up by civilian providers. All post-operative data, regardless if AD or ARC, must be transmitted to the APM (documentation attached in AIMWTS meets this requirement).

For an applicant to AASD, the individual must meet pre-RS clinical criteria and documentation of such must be provided. All pre-operative, intra-operative and post-operative documentation must be forwarded to the APM (documentation attached in AIMWTS meets this requirement). At minimum the individual must be 12 months post-RS for waiver consideration. US Air Force Academy (USAFA) cadets must be treated at the USAFA Laser Center for either PRK (ASA) or LASIK (ISA). Non-active duty pilot applicants (civilians, ROTC) must pursue RS at their own expense and follow-up by civilian providers. They will be evaluated at the ACS at the time of medical flight screening (MFS) to determine if they meet waiver criteria. Active duty pilot applicants will also be evaluated at the ACS during their Medical Flight Screening (MFS) appointment.

For trained AASD refractive surgery applicants with anisometropia, appropriate waiver action and approval will be required prior to RS application approval in following scenarios: FC I pilot training applicants with greater than 2.00D of anisometropia; FC II pilots and FC IA navigator applicants with greater than 2.50D of anisometropia; FC II non-pilots and FC III aviators with greater than 3.50 of anisometropia. See the excessive refractive error (anisometropia, Table 4) and defective depth perception waiver guides for details.

For complete program information, please review the following web sites managed by the APM: <https://kx.afms.mil/USAF-RS> (dot mil) or <http://airforcemedicine.afms.mil/USAF-RS> (public access). If unable to access, contact the APM at USAFSAMAircrowProgramManager@wpafb.af.mil

II. Aeromedical Concerns.

These elective surgical procedures although highly successful in general are not risk free and represent an investment by the patient and his/her squadron initially. Topical steroids are required following RS to control the healing response and reduce the risk of corneal haze and scarring. However, topical steroids may increase the risk of infection, produce elevated intraocular pressure in some individuals and may cause development of cataracts. To date, two aircrew members have sustained permanent visual field defects and vision loss as a result of topical steroid related complications. Therefore, frequent monitoring of intraocular pressure and close follow-up is required.

AASD personnel are restricted from deployment as long as steroid eye drops are in use; however, the aircrew member may be waived by the MAJCOM waiver authority to return to local flight duties in order to maintain qualifications. Participation in flight simulator and altitude chamber training while on steroid eye drops is permissible after initial waiver is granted by the waiver authority. An aeromedical summary submitted to MAJCOM waiver authority must provide evidence that all applicable vision standards are met, no post-operative complications exist, and the refraction is stable (two refractions separated by at least two weeks with no more than 0.50D change.) When the aviator has been directed to discontinue steroid eye drop use, the member may be returned to world-wide-qualified status for deployment purposes.

Degradation in the quality of vision following RS can affect operational visual performance, despite a finding of high contrast visual acuity (standard vision charts) that meets flight standards. Significant complications include dry eye symptoms, corneal haze, glare, halos, diplopia, reduced low contrast sensitivity, unaided night vision, and night vision goggles (NVG) performance. Recovery from RS complications may require extended recuperation time extending to a year or more. Under- and over-corrections of refractive errors can result from both ASA and ISA treatments. Refractive surgery enhancement (secondary treatment) or requirement to wear traditional correction (spectacles or contact lenses) may be required. UV protection is required post-RS to reduce UV-induced phototoxic damage than can potentiate corneal haze.

ISA procedures uniquely present flap complication risks. Intra-operative complications include: thin flap, incomplete flap, buttonhole flap or free flap. In addition, flap striae (wrinkles) can develop intra-operatively or at any time during the convalescent period. Surgical intervention is usually required to address striae complications. The risk of corneal flap displacement by high Gz forces or ejection sequences is believed to be low; although this has not been thoroughly studied. The effect of chronic, low grade hypoxia on visual performance following ISA has also not been completely studied. A single study at sea level (normobaria) with simulated hypoxic environment equivalent to 25K feet revealed no reduction in vision.⁶ The effects of altitude up to 35K feet following both ASA and ISA has been thoroughly studied with no adverse effects noted.^{9, 10} Infectious keratitis can occur during the immediate postoperative period which can be

vision-threatening. Best corrected visual acuity may decrease by two or more lines in up to 3.6% if keratitis occurs.²

Flight surgeons should encourage post-RS aircrew to prepare for long duration flights and pending deployments. A bottle of sterile lubricating eye drops assists aviators in managing dry eye symptoms (a common post-RS complication) and thus minimizes rubbing of the eyes which can precipitate corneal abrasions or ISA flap dislocation. Post-operatively, aircrew must continue to be alert and vigilant in the use of eye protection in both operational and recreational environments, especially after ISA.

Air Force aeromedical policy now authorizes hyperopic RS treatment for eligible aircrew to decrease eye strain and reduce accommodative effort at near and distance. Flight surgeons and base-level optometrists need to understand that the visual recovery following hyperopic RS treatment is slower and may take up to six months to reach aeromedical standards in some cases. Although hyperopic RS is FDA approved and is deemed “safe and effective”, more quality of vision issues are reported compared to myopic RS. Therefore, hyperopic RS is being closely monitored under a new ACS Management Group. AD pilots and boom operators requesting hyperopic RS must obtain a baseline examination at the ACS and treatment at the Refractive Surgery Center, Wright-Patterson AFB, OH.

III. Waiver Considerations.

RS is disqualifying for all classes of flying duties; waiver is required. **Return to flight status before waiver approval is not authorized.** All LASIK flap dislocations need to be evaluated in person at the ACS even if treated promptly and deemed healed by the treating ophthalmologist. There is a risk in such cases of qualify of vision deficits.

Table 2 Waiverable Examination Results

Examination	Waiverable Results
Best corrected visual acuity (OVT)	20/20 or better each eye*
Precision Vision 5% low contrast chart	20/50 or better each eye*
Slit lamp exam	LASIK – no striae or flap complications* PRK – no more than trace corneal haze*
Refractive error	Stable, no more than 0.50 diopter shift in manifest sphere or cylinder refractive power between two readings at least 2 weeks apart*
Intraocular pressure (IOP)	Normal – ≤ 21 mmHg*
Fundus exam	No new or previously unrecognized retinal pathology†
Depth perception (OVT-DP)	Line D, E or F. If fails and previously waived for depth perception using AO Vectograph then waived limits of that test. See defective depth perception/stereopsis waiver guide.

* If outside these limits, refer to local eye care provider and/or treating refractive surgery center. If condition is unable to be resolved refer case to ACS.

† Work-up and submit waiver request for new diagnosis.

Table 3: RS Requirements Summary Table

		PRK⁸		LASIK⁷		Hyperopia⁶
		≤ -5.50	> -5.50 to ≤ -8.00	≤ -5.50	> -5.50 to ≤ -8.00	Plano to +3.00
Pilots	Surgery	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	WPAFB/Civilian ¹
	1-year follow-up	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	ACS
	Waiver Authority ⁵	MAJCOM	MAJCOM	MAJCOM	MAJCOM	AFMSA
In-flight Refuelers	Surgery	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	WPAFB/Civilian ¹
	1-year follow-up	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	ACS
	Waiver Authority ⁵	MAJCOM	MAJCOM	MAJCOM ²	MAJCOM ²	AFMSA
Other Trained Flyers and Aircrew Applicants	Surgery	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹
	1-year follow-up	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹
	Waiver Authority ⁵	MAJCOM	MAJCOM	MAJCOM	MAJCOM	MAJCOM
Pilot Applicants ²	Surgery	USAFA/Civilian & Any DoD RS Center ¹	USAFA/Civilian & Any DoD RS Center ¹	USAFA/Civilian & Any DoD RS Center ¹	USAFA/Civilian & Any DoD RS Center ¹	USAFA/Civilian & Any DoD RS Center ¹
	Initial follow-up for waiver ³	USAFA/FCI at time of MFS	USAFA/ACS at time of MFS	USAFA/FCI at time of MFS	USAFA/ACS at time of MFS	ACS ⁴ /ACS at time of MFS
	Waiver Authority	AETC	AETC	AETC	AETC	AETC ⁴
RPA Pilot Applicants	Surgery	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹	Any DoD RS Center/Civilian ¹
	Initial follow-up for waiver	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	Local Eye Clinic/Civilian ¹	USAFA/ACS at time of MFS
Other Flyer Applicants	Waiver Authority	AFMSA	AFMSA	AFMSA	AFMSA	AFMSA ⁴

1. If not eligible for TRICARE medical benefit (e.g. civilian, ROTC & most ANG/AFRC), will go to civilian provider.
2. AD pilot applicants are considered Warfighters until selected for training [they must have a qualified PE (pending MFS) before selection]. They must meet the AASD waiver criteria.
3. Initial follow up in conjunction with FC I application must be greater than one year after surgery (e.g. history of PRK or LASIK greater than one-year ago). ACS evaluation required for all non-USAFA >-5.50 diopter myopes.
4. For USAFA cadets, ACS evaluation is required prior to waiver (no “contingent on MFS” waivers).
5. Waiver authority for initial and renewal.
6. For both PRK and LASIK
7. Minimum DNIF of 1 month is required following LASIK. Initial waiver can be requested once applicable vision standards are met and refractive stability is established.
8. No minimum DNIF period is established following PRK, however, 2-3 months is generally required for enough corneal healing to occur to meet applicable vision standards and for refractive stability to occur.

AIMWTS review in Sep 2009 revealed 1712 total cases with a waiver disposition. There were 412 FC I/IA cases, 687 FC II cases and 612 FC III cases and one case labeled “UAS”. Within the FC I/IA group, 163 later had a disposition for FC II which is not reflected in the FC II total above. There were a total of 80 disqualifications; 25 were FC I/IA, 20 were FC II, and there were 35 in the FC III category. There was also one FC I

case that was granted an ETP. Within the population of those disqualified, about 60% were for vision-related problems, excessive presurgical refractive error, or side effects from the procedure such as haze, and the remainder were disqualified for other medical conditions or administrative issues.

IV. Information Required for Waiver Submission.

If the trained aircrew member has an uncomplicated postoperative course and meets applicable vision standards at the initial waiver point postoperatively, an **indefinite waiver may be granted**, except for pilots and boom operators with pre-operative hyperopia and high myopia (>-5.50 to ≤ -8.00). For pilots and boom operators with uncomplicated hyperopia and high myopia surgical treatments, **an indefinite waiver may be granted at the one year waiver renewal point**. Annual routine PHA vision exams will be required after this point. Complicated cases, or cases not meeting vision standards, should be referred to the ACS for review.

Required items in the aeromedical summary for initial waiver for **trained AASD** members:

- A. History:
 - 1. Pre-op cycloplegic refraction.
 - 2. Surgical procedure, date and location.
 - 3. Assessment (negative and positive) of post-op symptoms of glare, halos, reduced night vision and diplopia.
 - 4. Eye medications usage, past and current, include discontinuation date.
- B. Physical (Current):
 - 1. Uncorrected visual acuity high contrast (OVT) and Precision Vision 5% low contrast.
 - 2. Best corrected visual acuity high contrast (OVT) and Precision Vision 5% low contrast.
 - 3. Cycloplegic refraction and dilated fundus exam.
 - 4. Two post-op refractions at least 2 weeks apart that shows stability (no more than 0.50 diopter shift in **manifest** sphere or cylinder power).
 - 5. Slit lamp exam which must include grading of haze.
 - 6. Intraocular pressures (IOPs).
 - 7. Depth perception (OVT-DP). (If fails and previously waived for defective depth perception using AO Vectograph, then include AO Vectograph).
- C. Attach copy of "Permission to Proceed" letter.
- D. Attach copy of surgical documentation, post-RS evaluations (1, 3, 6, 12 months post-op and annually, and any other additional follow-ups) and any RS-related incidents (this will meet the requirement to send this info to the USAF-RS APM). The following is a link to the post-RS evaluation/incident forms to be utilized:
http://airforcemedicine.afms.mil/idc/groups/public/documents/webcontent/knowledgejunction.hcst?functionalarea=RS_USAF&doctype=subpage&docname=CTB_070886.

While on anti-inflammatory (steroid) eye drops, the aviator will be placed on non-mobility status, restricting the individual from deployment via AF Form 469. For LASIK, the aircrew member will similarly be placed on non-mobility status, restricting the individual from deployment via AF Form 469 for a minimum of one month after surgery, even if no longer on steroid eye drops.

If re-treatment is required or desired, it is considered new treatment and requirements are the same for initial waiver.

Any complications that arise after initial waiver will void the waiver and a new waiver request will be required after the complication is successfully managed.

Required items in the aeromedical summary for initial waiver for **applicants** for AASD:

- A. History:
 - 1. Address whether all clinical criteria prior to RS were met. If not, describe exceptions in detail.
 - 2. Pre-op cycloplegic refraction.
 - 3. Surgical procedure, date and location.
 - 4. Assessment (negative and positive) of post-op symptoms of glare, halos, reduced night vision and diplopia.
 - 5. Eye medications usage, past and current.
 - 6. Presence of other surgical or post-operative complications (e.g. corneal haze, flap striae, ocular hypertension, etc.)
 - 7. Must be 12 months post-RS, at minimum, for waiver consideration.
- B. Physical (Current):
 - 1. Uncorrected visual acuity high contrast (OVT) and Precision Vision 5% low contrast.
 - 2. Best corrected visual acuity high contrast (OVT) and Precision Vision 5% low contrast.
 - 3. Cycloplegic refraction and dilated fundus exam.
 - 4. Two post-op refractions that shows stability (no more than 0.50 diopter shift in **manifest** sphere or cylinder power).
 - 5. Slit lamp exam which must include grading of haze.
 - 6. Intraocular pressures (IOPs).
 - 7. Depth perception (OVT-DP).
- C. Attach copy of surgical documentation, post-RS evaluations and any RS-related incidents (this will meet the requirement to send this info to the APM. The following is a link to the post-RS evaluation form which should be used to report any RS related incidents:
http://airforcemedicine.afms.mil/idc/groups/public/documents/webcontent/knowledgejunction.hcst?functionalarea=RS_USAF&doctype=subpage&docname=CTB_070886.
- D. Initial waiver term of validity may be indefinite for uncomplicated cases at the waiver authority's discretion; however, AASD applicants are not eligible for waiver until at least one year following uncomplicated surgery. Post-RS evaluations are desired at 1, 2 (if

ASA), 3, 6, and 12 months post-op. All examination documentation is required for submission at the initial waiver point.

Any complications that arise after initial waiver will void the waiver and a new waiver request will be required after the complication is successfully managed. The first waiver renewal is no longer required at 12 months post surgery if no complications are detected during the post-operative course or on the required annual refractive surgery follow-up exam.

Required items in the aeromedical summary for waiver renewals:

A. History:

1. Pre-op cycloplegic refraction.
2. Surgical procedure, date and location.
3. Assessment (negative and positive) of post-op symptoms of glare, halos, reduced night vision and diplopia.
4. Eye medications usage, past and current.

B. Physical (Current):

1. Uncorrected visual acuity high contrast (OVT) and Precision Vision 5% low contrast.
2. Best corrected visual acuity high contrast (OVT) and Precision Vision 5% low contrast.
3. Manifest refraction
4. Slit lamp exam which must include grading of haze.
5. Intraocular pressures (IOPs), if on steroid eye drops.
6. Depth perception (OVT-DP). (If fails and previously waived for defective depth perception using AO Vectograph, then include AO Vectograph).

C. Attach copy of post-RS evaluations (1, 3, 6, 12 months post-op, and annually if applicable) not previously sent and any RS-related incidents (this will meet the requirement to send this info to the USAF-RS APM). If no complications are detected during the post-op exams, an indefinite waiver may be requested and granted at the waiver authority's discretion.

The following is a link to the post-RS evaluation/incident forms to be utilized:

http://airforcemedicine.afms.mil/idc/groups/public/documents/webcontent/knowledgejunction.hcst?functionalarea=RS_USAF&doctype=subpage&docname=CTB_070886.

ICD 9 Codes for Corneal Refractive Surgery	
367.1	MYOPIA Treated With OPERATIONS ON CORNEA
11.71	Keratomileusis (LASIK, WFG-LASIK)
11.79	Other operations on cornea (PRK, LASEK, epi-LASIK, WFG-PRK)

V. References.

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4. Doane JF, Slade SG. Chapter 20 – LASIK: Indications and Techniques. In *Ophthalmology*, 2nd ed. Ed by Yanoff, M; Duker, JS; Augsburger, JJ, et al. Mosby; St Louis. 2004.
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6. Larys RP. LASIK at high altitude – a study of the worst-case mission scenario. Presented at the International Military refractive Surgery Symposium, February 5-7, 2007 in San Antonio, Texas.
7. Surgeon General's Policy Letter, USAF Refractive Surgery (USAFS-RS) Program, dated 21 May 07.
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10. Aaron MT, Gooch JM, Reilly C, et al. Effect of High Altitude on Laser Assisted In Situ Keratomileusis (LASIK) Eyes. Unpublished, currently undergoing process for USAFSAM technical report publication.